



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Gordon James Smith

Serial No.: 09/877,392

Filed: June 8, 2001

For: Method and Apparatus For Providing
A Pay-At-Delivery Interface To a
Driver of a Vehicle

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Group Art Unit: 3622

Examiner: Young, John L.

Confirmation No.: 2432

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING
37 CFR 1.8

I hereby certify that this correspondence and the documents referred to as attached therein are being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

November 12, 2004
Date

Debra A. Peterson
Debra A. Peterson

Dear Sir:

DECLARATION UNDER 37 C.F.R. § 1.131

I, James R. Nock, as a representative of assignee International Business Machines, (IBM) of application serial No. 09/877,392 (the "Application"), hereby declare as follows:

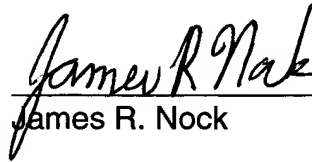
1. Attached is an inventor disclosure (Exhibit A) dated prior to May 25, 2001. Confidential information not relevant to the invention date of the Application is redacted.

2. In view of Exhibit A, the invention of pending claims 1-42 was conceived of prior to May 25, 2001, and filed with due diligence from prior to May 25, 2001, to filing of the present application on June 8, 2001.

3. I hereby declare that all statements made herein of my own knowledge are true, and that statements made on information and belief are believed to be true. Further, I hereby acknowledge that making willfully false statements is punishable by

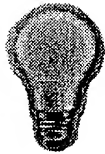
fine or imprisonment, or both, under 18 U.S.C. § 1001, and that any such willful false statements may jeopardize the validity of the Application or any patent resulting therefrom.

November 12, 2004
Date



James R. Nock
Senior Attorney
Title

Exhibit A



Disclosure ROC8-2001-0136

Prepared for and/or by an IBM Attorney - IBM Confidential

Created By: Gordon Smith **Created On:** 02/24/2001 12:31:05 PM

Last Modified By: Gordon Smith **Last Modified On:** 02/26/2001 12:15:41 PM

Required fields are marked with the asterisk (*) and must be filled in to complete the form .

*Title of disclosure (in English)

Customer Interface for Pay-at-Delivery Systems

Summary

Status	Submitted
Processing Location	ROC
Functional Area	60 - STD - Hard Disk Drive Development - Steven G. Smith
Attorney/Patent Professional	James R Nock/Rochester/IBM
IDT Team	Rich Greenberg/Rochester/IBM; Bob Kertis/Rochester/IBM; Rick Philpott/Rochester/IBM; Gordon Smith/Rochester/IBM; Douglas Piltingsrud/Rochester/IBM; Don Vosberg/Rochester/IBM; Pete Cummings/Rochester/IBM; Christopher Taylor/Rochester/IBM; Jim Mosser/Rochester/IBM; James R Nock/Rochester/IBM
Submitted Date	02/26/2001 01:12:43 PM EST
Owning Division	STD
Incentive Program	
Lab	
Technology Code	
PVT Score	No PVT score has been calculated.To calculate a PVT score, press the 'Calculate' button.

Inventors with Lotus Notes IDs

Inventors: Gordon Smith/Rochester/IBM

Inventor Name	Inventor Serial	Div/Dept	Inventor Phone	Manager Name
> Smith, Gordon J.	040123	35/CHVA	553-0579	Gillis, D.R. (Donald)

> denotes primary contact

Inventors without Lotus Notes IDs

IDT Selection

Select Functional Area

IDT Team: Rich Greenberg/Rochester/IBM Bob Kertis/Rochester/IBM	Attorney/Patent Professional: James R Nock/Rochester/IBM
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Rick Philpott/Rochester/IBM Gordon Smith/Rochester/IBM Douglas Piltingsrud/Rochester/IBM Don Vosberg/Rochester/IBM Pete Cummings/Rochester/IBM Christopher Taylor/Rochester/IBM Jim Mosser/Rochester/IBM James R Nock/Rochester/IBM	
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***Main Idea**

1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.

This invention solves the problem of a limited customer interaction at a pay-at-delivery device such as a gas pump. There are many significant features of the invention which are listed below. The value of the invention to IBM is gaining intellectual property in the rapidly expanding (growth area) of mobile computing where motor vehicles have computing and wireless interface capabilities with exterior devices such as fuel dispensing pay-at-delivery systems (PADS). The invention describes business methods for improving the interface at a PADS. This invention is a re-submission of ROC8-2000-0523 that includes extensive broadening that became possible after reviewing the limited prior art in the field of the invention. This previous invention disclosure is a reference for the current disclosure. Since this new invention relates to business methods, it is being submitted for consideration under the "**Business Methods Patent Incentive Program**".

Significant Novel Features of this Invention

- **Adaptive advertising at a pay-at-delivery system (hereinafter referred to as PADS) based on local weather conditions. For example, if it is raining, a customer sees advertising for wiper blades at a service station. Forecasted weather information is also used.**
- **Adaptive advertising at PADS based on estimated economic/financial means of customer. The means are estimated on the at least some of the following factors gather at a PADS located at a service station:**
 - a) **type of vehicle based on transmitted data from vehicle to PADS or other wireless receiver connected to PADS**
 - b) **credit report of customer**
 - c) **type of gasoline (e.g. grade) and/or amount to be purchased or has been purchased in the past**
 - d) **stored customer profile which is retrieved based on credit card or other customer card, RFID of customer and/or vehicle**
- **Soliciting information from a customer for the purpose of creating or altering database information about the customer that can be used to reduce the latency at subsequent visits. As an incentive, discounts, coupons, or related means may be used as an enticement for the customer to enter information.**
- **Offering a customer discounted merchandise in the future if purchased at a sister service station within a certain time period and if gasoline is purchased for the same vehicle id (vehicle id as a basis for discounts is new).**
- **On the basis of information gathered as to the driver's destination (which may be obtained on the basis of a question and answer at the PADS or obtained directly from the vehicle GPS, for example) discounts, coupons, or other incentives may be offered at sister service stations that exist along a route that is most desirable for the driver to take. "Desirable" may reflect one or more of the following factors:**
 - a) **anticipated traffic congestion determined from accident reports, weather, road conditions, construction**
 - b) **sluggish sales at certain stations**
 - c) **collaboration with theme parks, scenic stops, police, tourist attractions, retail sales**

complexes, etc.

In addition, a hotel/motel can be reserved at the PADS and a discount may be offered.

- At the end of a purchase at a PADS, the driver's ID is entered into a lottery system that will result in free gasoline or other incentives if the driver refuels at the same station or a sister station within a predetermined time period.
- As a vehicle approaches a PADS, vehicle information is transmitted to the PADS so that the PADS has information about the vehicle and expected driver before the actual dispensing of product begins. The expected driver is derived from one or more of the following factors:
 - a) Vehicle ID (for example RFID tag in vehicle)
 - b) Time of day (e.g. dad has car during the day, son typically drives it at night established from purchase history)
 - c) Communication between RFID tag or other device owned by driver and the PADS.
- On the basis of the type, age, and mileage of a vehicle as determined by a customer query, transmission of information via wireless from vehicle to PADS, recommended grade of gasoline is preselected. The PADS may display one or more of the following messages:
 - a) advertising for fuel additive, motor oil, etc. recommended by vehicle manufacturer based on model, age, mileage
 - b) reminder for oil change, maintenance, or other service
 - c) alert customer if a manufacturer recall is required (vehicle may communicate to the PADS that recall repair was completed)
 - d) calculate fuel economy (e.g. miles-per-gallon), report to customer, vehicle manufacturer, EPA, etc.

2. How does the invention solve the problem or achieve an advantage,(a description of "the invention", including figures inline as appropriate)?

The invention solves the problem of a currently limited customer interface by using environmental, databasal, and vehicle information in a manner that greatly enhances the customer experience at a PADS. Enhancement should be understood to impact the customer, business establishment using PADS, state and local department of transportation, law enforcement, and area economy.

A block diagram of the invention is shown below.

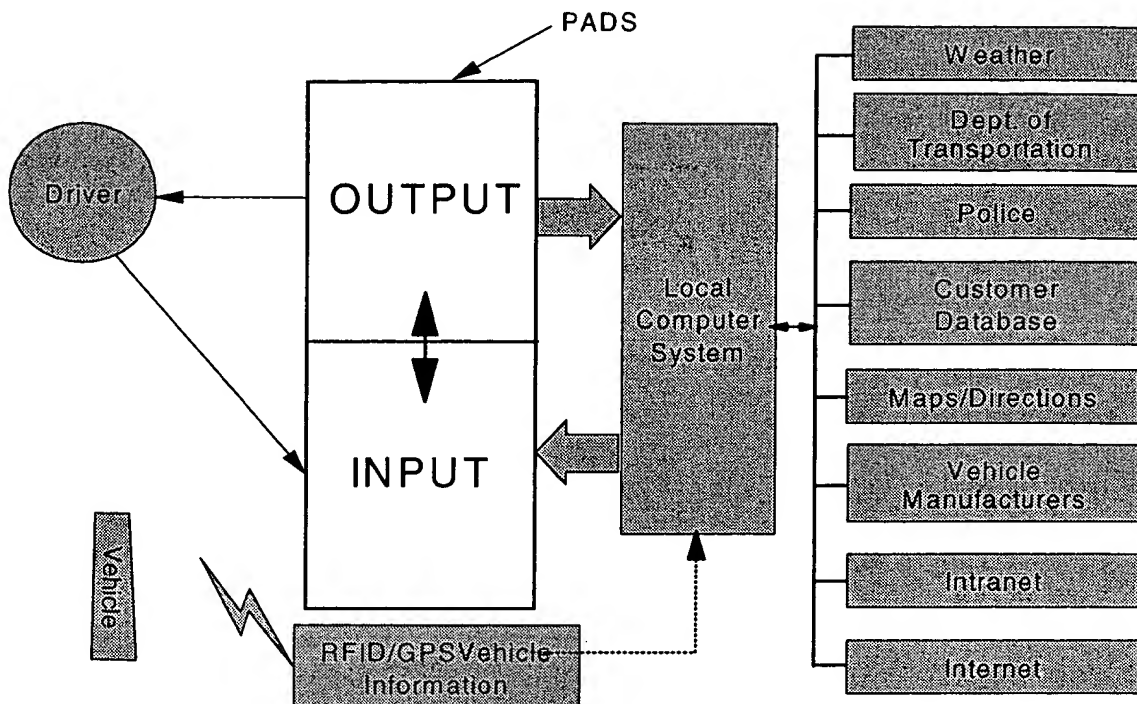


Figure 1. Overall block diagram of the invention. Information about a vehicle is obtained from a vehicle manufacturer database, road conditions, safety, construction can be obtained from police database, department of transportation, or internet/intranet. Weather information, maps and directions, are similarly available to a local computer system interfaced to one or more pay-at-delivery systems (PADS). The driver or other paying customer enters information and also receives information from the PADS in the form of advertisements which are customized based on the customer, vehicle, and weather conditions. A customer database is used to collect and distribute information to local and remote PADS as required. Vehicle RFID and GPS information can also be gathered by the local computing system.

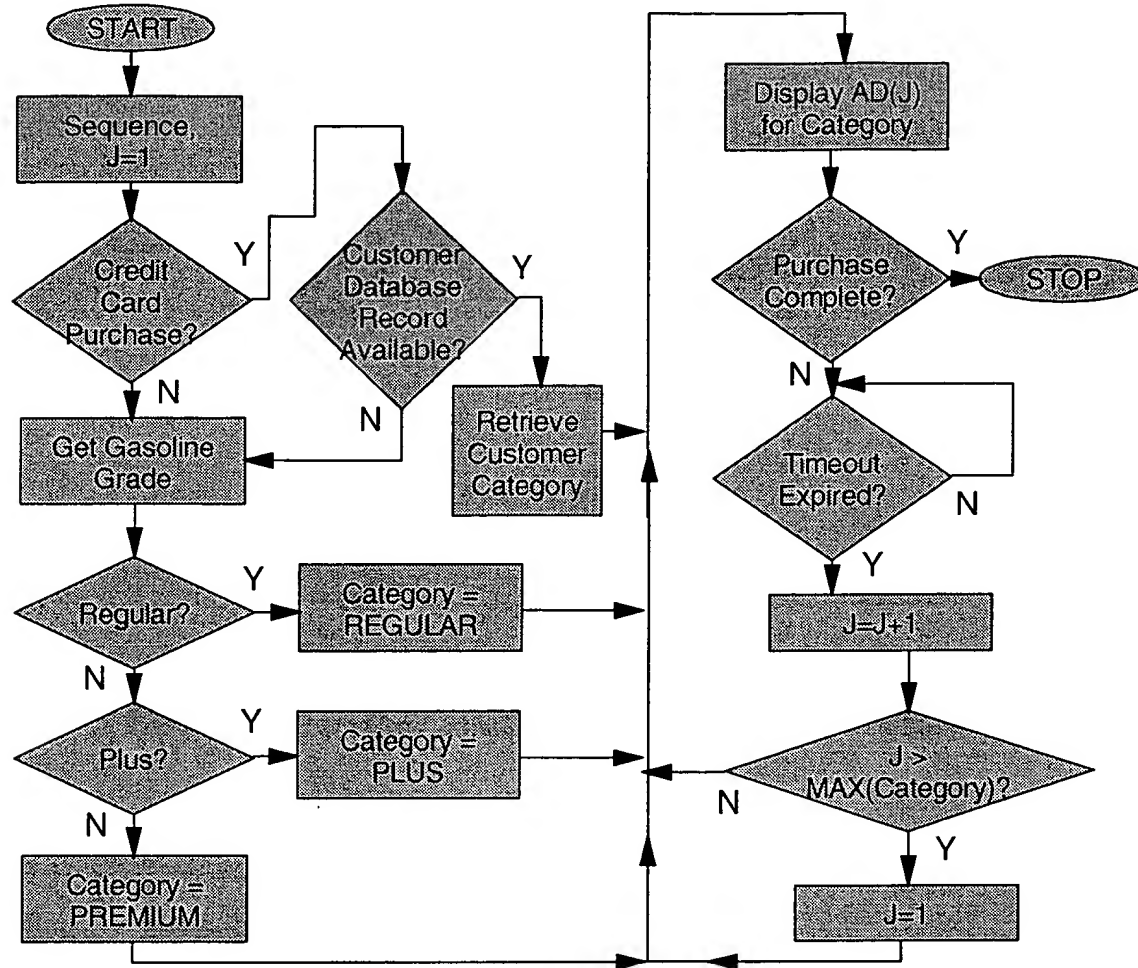


Figure 2. A flowchart showing how advertising at PADS is tied to the grade of gasoline being pumped or to a stored customer database record with this information. The customer database record may contain a more accurate Category for advertising that better reflects the customer's past buying history, tastes, etc.

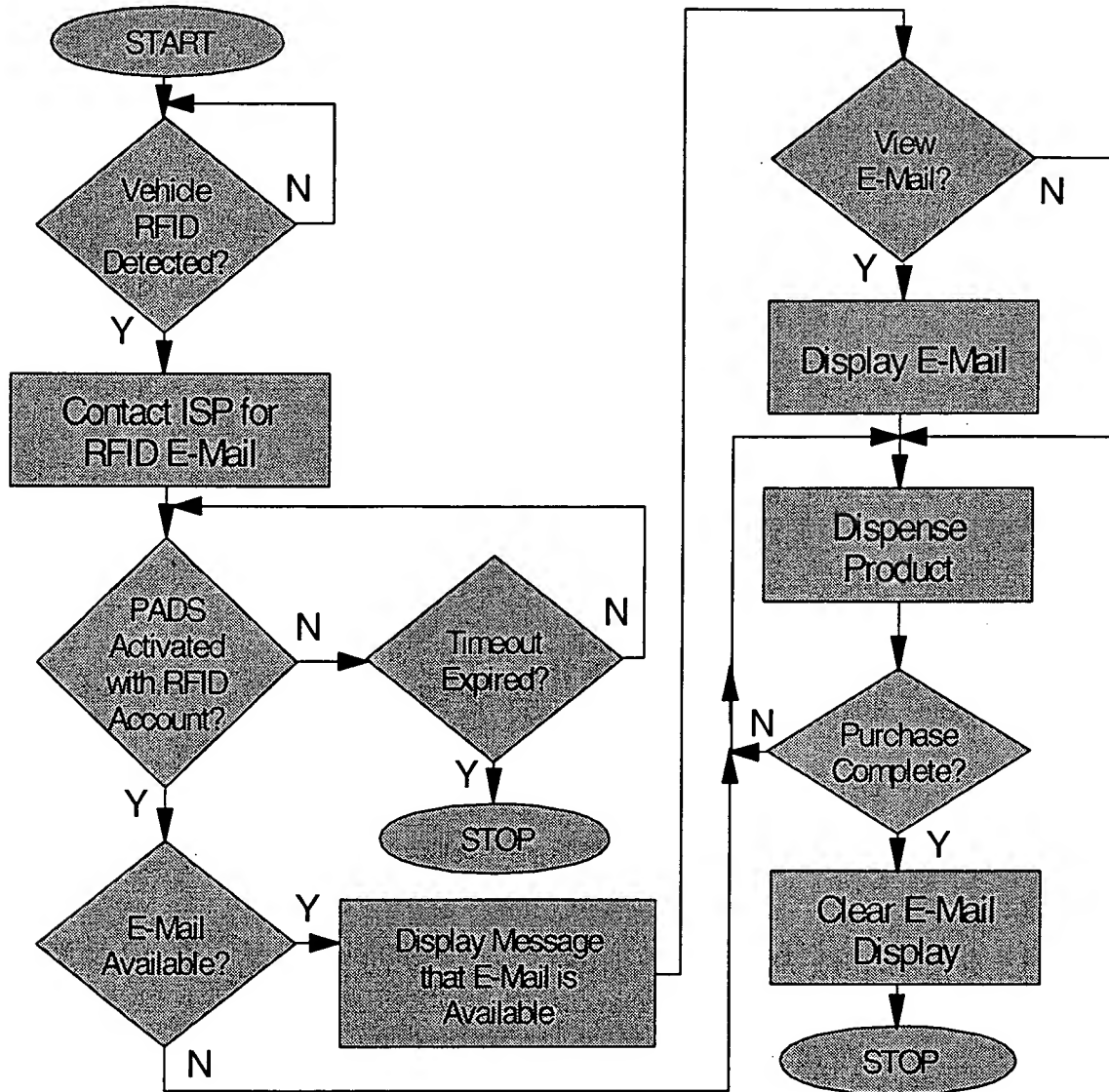


Figure 3. Flowchart showing e-mail account activation and display based on pre-fetch based on vehicle RFID.

The pre-fetch eliminates latency of initial display at PADS especially when network congestion is present. Although not shown, a customer may activate e-mail by entering a password and/or credit card. After the product purchase is complete, the e-mail display is cleared for privacy.

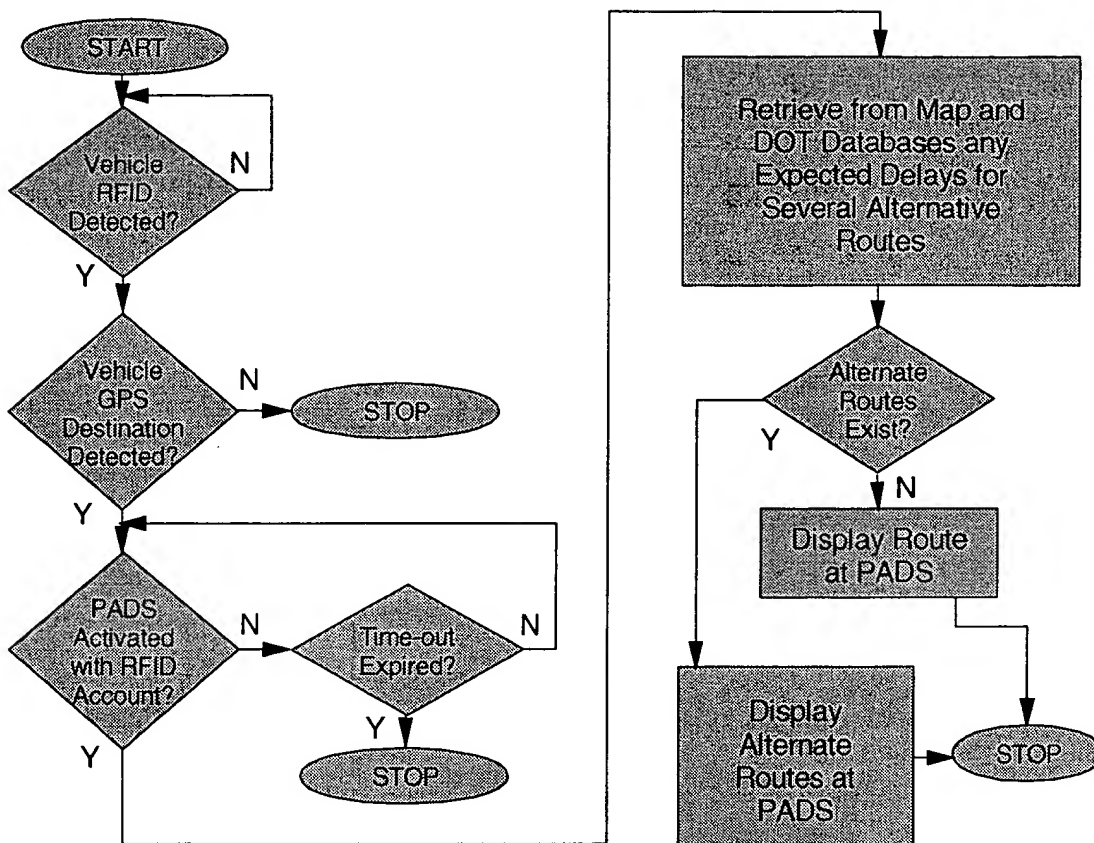


Figure 4. A flowchart showing detection and correlation between vehicle RFID and GPS destination information obtained from a vehicle. The subsequent activation of a PADS with a customer owning the RFID and GPS accounts is provided with route information at the PADS. The advantage to the service station owing the PADS is that alternate route information can be made available that will cause the vehicle to pass the greatest number of sister service stations where discounts may be made available to the customer. Additionally, up to the minute alternate routing information can be made available with sophisticated graphics and video that is normally not practical using computing based facilities in a vehicle.

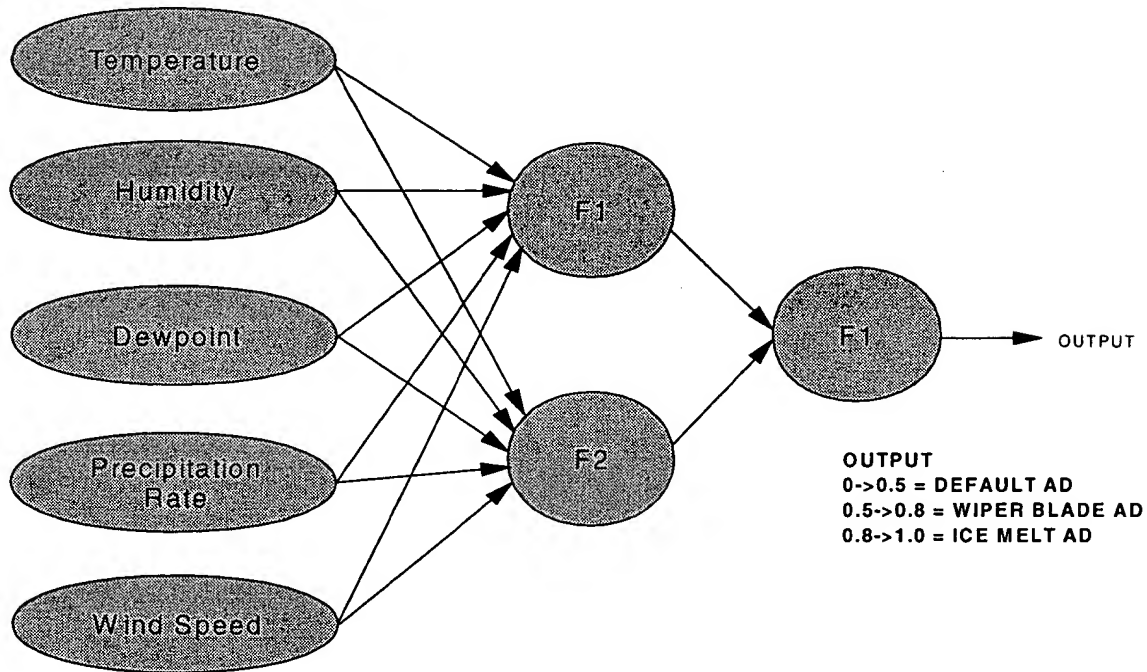


Figure 5. A neural network, shown fully connected, for determining the type of advertisement to be featured on a PADS. Local weather condition information is input to the network which is trained to respond with a number between 0 and 1, for example, with different advertisements (ADs) determined by the output. The network is assumed to have been "trained" previously.

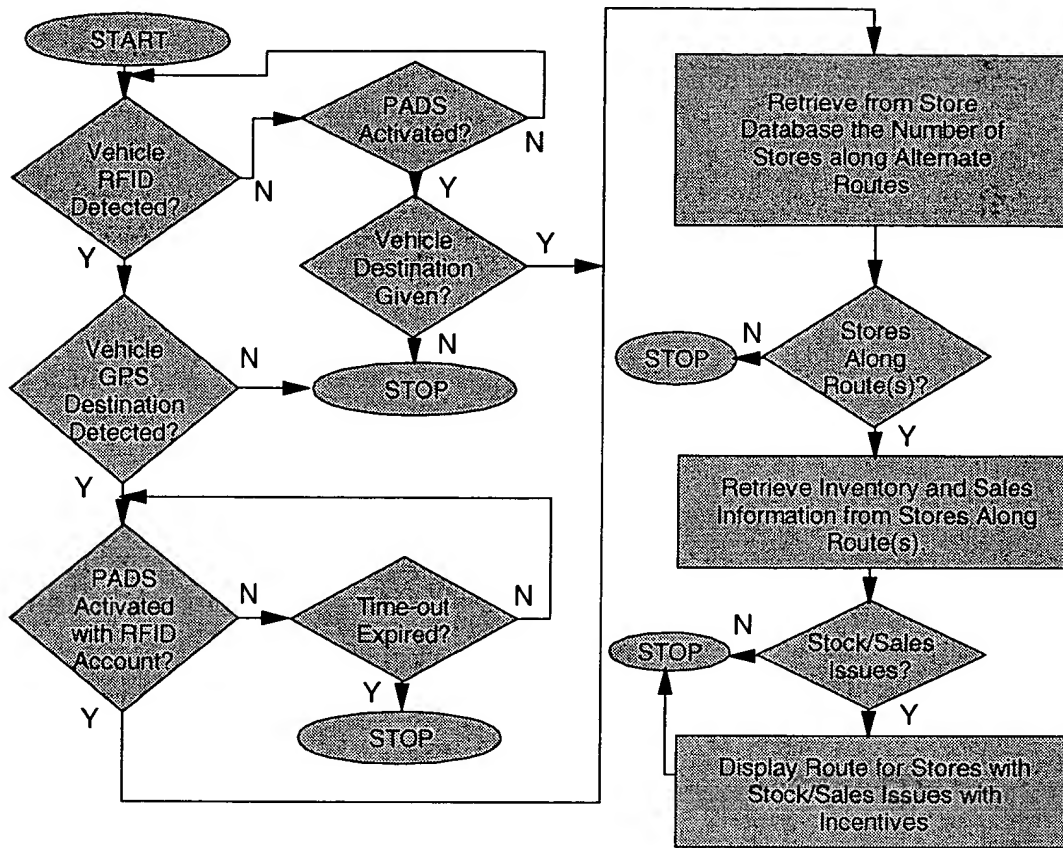


Figure 6. A flowchart showing a method for displaying and recommending driving routes that are most favorable to both customer and store (e.g. service station) from a economic standpoint.

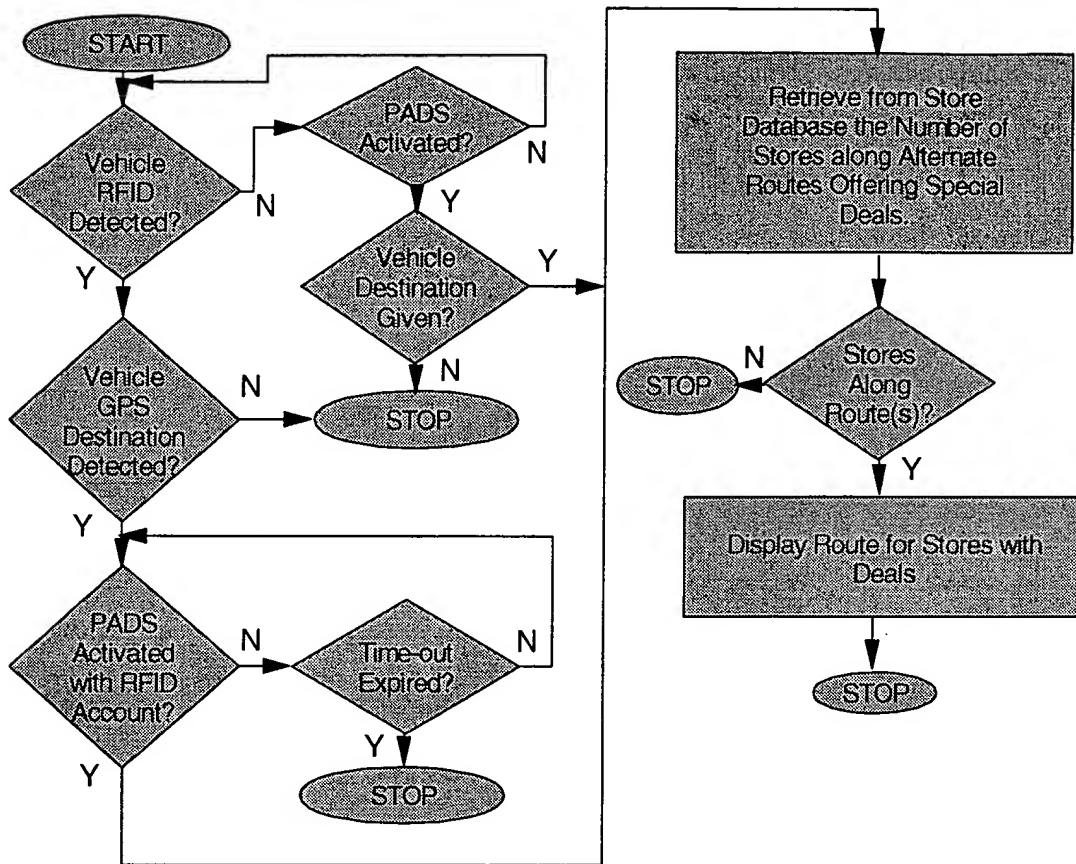


Figure 7. A flowchart showing a method for displaying and recommending driving routes that are most favorable to both customer and store (e.g. service station) from an economic standpoint. Stores with special incentives are along the "highlighted" route on a PADS display.

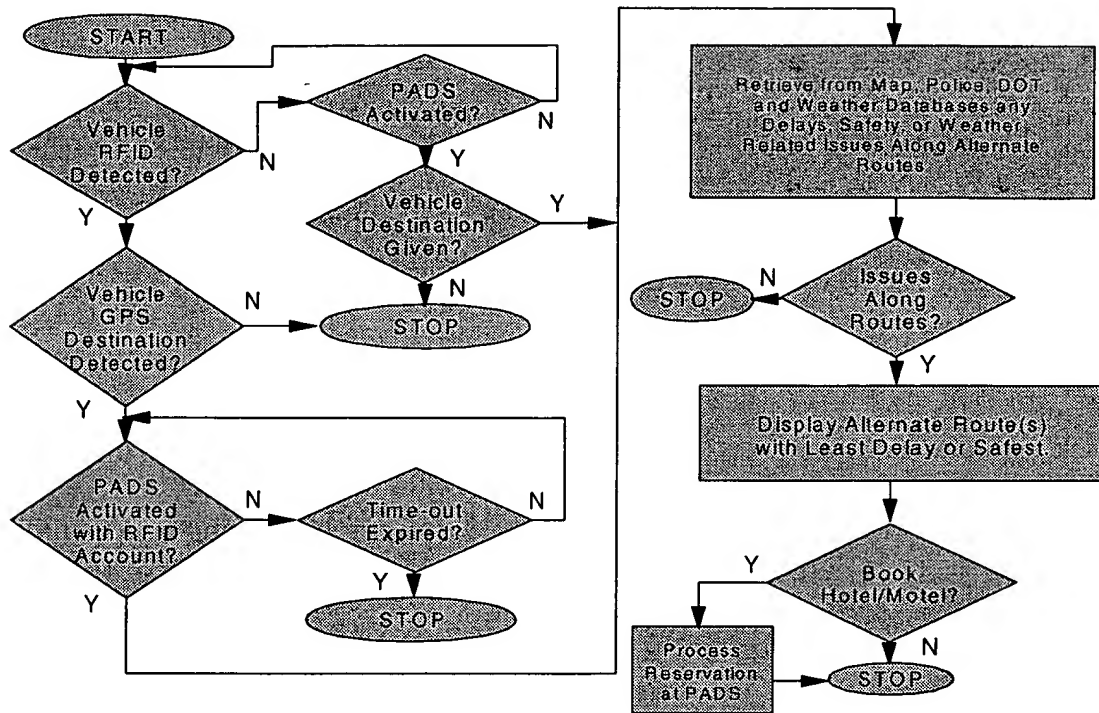


Figure 8. A flowchart showing a method for displaying and recommending driving routes that are most favorable from a safety or expected delay standpoint. If safety and/or weather issues are considered not worth the risk of continuing driving, a hotel or motel can be booked at the PADS and a discount may be offered.

3. If the same advantage or problem has been identified by others (inside/outside IBM), how have those others solved it and does your solution differ and why is it better?
Others have not solved the problems described in this disclosure.

4. If the invention is implemented in a product or prototype, include technical details, purpose, disclosure details to others and the date of that implementation.

***Critical Questions (Questions 1-9 must be answered)**

***Question 1**

On what date was the invention workable? 09/11/2000 **Please format the date as MM/DD/YYYY**
(Workable means i.e. when you know that your design will solve the problem)

***Question 2**

Is there any planned or actual publication or disclosure of your invention to anyone outside IBM?

☐ Yes
☒ No

If yes, Enter the name of each publication or patent and the date published below.

Publication/Patent:

Date Published or Issued:

Are you aware of any publications, products or patents that relate to this invention?

☒ Yes
☐ No

If yes, Enter the name of each publication or patent and the date published below.

Publication/Patent:6078896, 6026370, 5832457

Date Published or Issued: 2000,2001

***Question 3**

☐ Yes

☒ No

Has the subject matter of the invention or a product incorporating the invention been sold, used internally in manufacturing, announced for sale, or included in a proposal?

Is a sale, use in manufacturing, product announcement, or proposal planned?

☐ Yes

☒ No

If Yes, identify the product if known and indicate the date or planned date of sale, announcements, or proposal and to whom the sale, announcement or proposal has been or will be made.

Product:

Version/Release:

Code Name:

Date:

To Whom:

If more than one, use cut and paste and append as necessary in the field provided.

***Question 4**

Was the subject matter of your invention or a product incorporating your invention used in public, e.g., outside IBM or in the presence of non-IBMers?

If yes, give a date. **Please format the date as MM/DD/YYYY**

☐ Yes

☒ No

***Question 5**

☐ Yes

☒ No

Have you ever discussed your invention with others not employed at IBM?

If yes, identify individuals and date discussed. Fill in the text area with the following information, the names of the individuals, the employer, date discussed, under CDA, and CDA #.

***Question 6**

☐ Yes

☒ No

☐ Not sure

Was the invention, in any way, started or developed under a government contract or project?

If Yes, enter the contract number

***Question 7**

☐ Yes

☒ No

☐ Not Sure

Was the invention made in the course of any alliance, joint development or other contract activities?

If Yes, enter the following (in English):

Name of Alliance, Contractor or Joint Developer

Contract ID number

Relationship contact name

Relationship contact E-mail

Relationship contact phone

***Question 8**

☒ Yes

☐ No

Have you, or any of the other inventors, submitted this same invention disclosure or similar invention disclosure previously?

If Yes, please provide disclosure number below:

ROC8-2000-0523

***Question 9**

☐ Yes
☒ No

Are you, or any of the other inventors, aware of any related inventions disclosures submitted by anyone in IBM previously?

If Yes, please provide the docket or disclosure number or any other identifying information below:

Question 10

What type of companies do you expect to compete with inventions of this type? *Check all that apply.*

- ☐ Manufacturers of enterprise servers
- ☐ Manufacturers of entry servers
- ☐ Manufacturers of workstations
- ☐ Manufacturers of PC's
- ☒ Non-computer manufacturers
- ☐ Developers of operating systems
- ☐ Developers of networking software
- ☐ Developers of application software
- ☒ Integrated solution providers
- ☒ Service providers
- ☐ Other (Please specify below)

Question 11

If the invention relates to a product or service that is outside the scope of your business unit, please recommend IBM business unit(s), IBM location(s) or individual(s) within IBM that you think would provide a good evaluation of your invention:

Patent Value Tool (Optional - this may be used by the inventor and attorney to assist with the evaluation)
(The Patent Value tool can be used by the inventor(s) to determine the potential licensing value of your invention.)

No PVT score has been calculated. To calculate a PVT score, press the 'Calculate' button.

Market

What is the anticipated annual market size (in dollars) that will be captured by your invention?

CLAIMS

Question 1 - How new is the technical field?

Question 2 - How central is the invention to the product(s) which might be expected to contain the invention?

Question 3 - What is the scope of the claim?

PORTFOLIO NEED

What are the portfolio needs in the area of your invention?

EXPLOITATION & ENFORCEMENT

Question 1 - How easily can the use of the invention by a competitor be detected?

Question 2 - How easily can the use of the invention be avoided by a competitor?

BUSINESS VALUE

Question 1 - What percentage of the companies producing products in the field of this invention might use this invention?

Question 2 - What is the value of this patent to current or anticipated Alliance Activity between IBM and other companies?

Question 3 - What is the value of this patent to current or anticipated Technology Transfer Activity between IBM and other companies?

Question 4 - Does it result in prestige to IBM?

Post Disclosure Text & Drawings

Enter any additional information relating to this disclosure below:

(Form Revised 12/17/97)